

What is claimed is:

1. A crystalline form of nateglinide (Form A) characterized by data selected from the group consisting of: an XRPD pattern with peaks at 6.6, 13.3, 13.9, 16.8, 27.2 and 28.0 ± 0.2 degrees 2θ ; and a DSC thermogram with endotherms at about 70, 98 and 138°C.
2. The crystalline form of nateglinide of claim 1, wherein the crystalline form has an XRPD pattern with peaks at 6.6, 13.3, 13.9, 16.8, 27.2 and 28.0 ± 0.2 degrees 2θ .
3. The crystalline form of claim 2, wherein the crystalline form has an XRPD pattern as substantially depicted in Figure 1.
4. A process for preparing the crystalline form of claim 1 comprising the steps of:
 - a) preparing a solution of nateglinide in xylene;
 - b) crystallizing the crystalline form from the solution; and
 - c) recovering the crystalline form.
5. A crystalline form of nateglinide (Form M) characterized by data selected from the group consisting of: an XRPD pattern with peaks at 16.2, 16.4, 17.0, 17.8, 18.6, 19.4 and 19.6 ± 0.2 degrees 2θ ; and a DSC thermogram with endotherms at about 90, 102 and 128 °C.
6. The crystalline form of nateglinide of claim 5, wherein the crystalline form has an XRPD pattern with peaks at 16.2, 16.4, 17.0, 17.8, 18.6, 19.4 and 19.6 ± 0.2 degrees 2θ .
7. The crystalline form of claim 6, wherein the crystalline form has an XRPD pattern as substantially depicted in Figure 11.
8. A process for preparing the crystalline form of nateglinide of claim 5 comprising the steps of:
 - a) preparing a solution of nateglinide in carbon tetrachloride;
 - b) crystallizing the crystalline form from the solution; and
 - c) recovering the crystalline form.
9. A crystalline form of nateglinide (Form N) characterized by data selected from the group consisting of: an XRPD pattern with peaks at 5.3, 5.5, 8.9, 9.9, 20.4 and 21.1 ± 0.2 degrees 2θ ; and a DSC thermogram with endotherms at about 77, 100, 130 and 137 °C.
10. The crystalline form of claim 9, wherein the crystalline form is characterized by an XRPD pattern with peaks at 5.3, 5.5, 8.9, 9.9, 20.4 and 21.1 ± 0.2 degrees 2θ .

11. The crystalline form of claim 10, wherein the crystalline form has an XRPD pattern as substantially depicted in Figure 12.
12. A process for preparing the crystalline Form of claim 9 comprising the steps of:
 - a) preparing a solution of nateglinide in dichloroethane;
 - b) crystallizing the crystalline nateglinide from the solution; and
 - c) recovering the crystalline nateglinide.
13. A crystalline form of nateglinide (Form Q) characterized by data selected from the group consisting of: an XRPD pattern with peaks at 5.1, 5.6, 16.2 and 19.8 ± 0.2 degrees 2θ ; and a DSC thermogram with endotherms at about 102 and 126°C.
14. The crystalline form of nateglinide of claim 13, wherein the crystalline form is characterized with peaks at 5.1, 5.6, 16.2 and 19.8 ± 0.2 degrees 2θ .
15. The crystalline form of claim 14, wherein the crystalline form has an XRPD pattern as substantially depicted in Figure 15.
16. A process for preparing the crystalline form of nateglinide of claim 13 comprising the steps of:
 - a) preparing a solution of nateglinide in chloroform;
 - b) crystallizing the crystalline form from the solution; and
 - c) recovering the crystalline form of nateglinide.
17. A process for preparing the crystalline form of claim 13 comprising the steps of:
 - a) triturating a crystalline form of nateglinide in chloroform, with the proviso that the nateglinide triturated is not Form U; and
 - b) recovering the crystalline form of claim 13.
18. The process of claim 17, wherein the nateglinide triturated is Form H.
19. A process for preparing a crystalline form of claim 13 comprising the steps of:
 - a) triturating a crystalline form of nateglinide in dichloroethane to obtain the crystalline form of claim 13; and
 - b) recovering the crystalline form of claim 13.
20. A crystalline form of nateglinide, wherein the crystalline form (Form Y) has an XRPD pattern with peaks at 6.1, 14.2, 15.1 and 18.7 ± 0.2 degrees 2θ .
21. The crystalline form of claim 20, wherein the crystalline form has an XRPD pattern as substantially depicted in Figure 19.

22. The crystalline form of nateglinide of claim 20, wherein the crystalline form is stable when heated to a temperature of about 60°C for about 8 hours.
23. A process for preparing dichloromethane solvate of the crystalline form of claim 20 comprising the steps of contacting nateglinide in the solid state with vapors of di-chloro methane to obtain the crystalline form, wherein the nateglinide contacted absorbs the vapors.
24. A process for preparing dichloromethane solvate of the crystalline form of claim 20 comprising the steps of:
 - a) triturating a crystalline form of nateglinide in dichloromethane to obtain the crystalline form of claim 20; and
 - b) recovering the crystalline form of claim 20.
25. The process of claim 24, wherein the nateglinide triturated is Form H.
26. A process for preparing the crystalline form of nateglinide of claim 20 comprising the steps of:
 - a) preparing a solution of nateglinide in dichloromethane;
 - b) crystallizing the crystalline form from the solution; and
 - c) recovering the crystalline form.
27. A process for preparing chloroform solvate of crystalline form of claim 20 comprising the step of storing crystalline nateglinide Form Q for a sufficient time at a suitable temperature to obtain the crystalline form of claim 20.
28. A process for preparing nateglinide crystalline Form Z comprising the steps of:
 - a) preparing a solution of an alkali metal or an alkaline earth metal salt of nateglinide in an aqueous solvent;
 - b) acidifying the solution to precipitate nateglinide Form Z; and
 - c) recovering the crystalline form.
29. The process of claim 28, wherein the aqueous solvent is water free of a co-solvent.
30. The process of claim 28, wherein the salt is that of potassium or sodium.
31. A process for preparing nateglinide crystalline Form Z comprising the steps of:
 - a) preparing a solution of nateglinide in a mixture of ethyl acetate and a C₅ to a C₁₂ hydrocarbon;
 - b) crystallizing the crystalline form of nateglinide from the solution; and
 - c) recovering the crystalline form.
32. The process of claim 31, wherein the hydrocarbon is heptane.

33. The process of claim 32, wherein the heptane to ethyl acetate ratio is from about 2 to about 4 (v/v).
34. A process for preparing nateglinide Form Z comprising the step of triturating nateglinide Form delta in water for a sufficient amount of time to obtain Form Z.
35. A crystalline form of nateglinide (Form θ) characterized by data selected from the group consisting of: an XRPD pattern with peaks at 4.8, 7.8, 15.5, 17.7 ±0.2 degrees 2θ; and a DSC thermogram with endotherms at about 70°C, 104°C, and 130°C, and an exotherm at about 115°C.
36. The crystalline form of claim 35, wherein the crystalline form is characterized with an XRPD pattern with peaks at 4.8, 7.8, 15.5, 17.7 ±0.2 degrees 2θ.
37. The crystalline form of claim 36, wherein the crystalline form is characterized by the XRPD pattern as substantially depicted in Figure 27.
38. A process for preparing crystalline nateglinide of claim 35 comprising the steps of:
 - a) preparing a solution of nateglinide in a mixture of a solvent selected from the group consisting of methanol, ethanol, isopropanol, acetone and ethyl acetate, and heptane;
 - b) crystallizing the crystalline form of nateglinide; and
 - c) recovering the crystalline form of nateglinide.
39. The process of claim 38, wherein crystallizing is carried out at a temperature of from about 0°C to about 10°C
40. The process of claim 38, wherein the solvent is ethyl acetate.
41. A crystalline form of nateglinide, wherein the crystalline form is a solvate of xylene.
42. The crystalline form of claim 41, wherein the crystalline form is nateglinide Form A.
43. A crystalline form of nateglinide, wherein the crystalline form is a solvate of carbon tetrachloride.
44. The crystalline form of claim 43, wherein the crystalline form is nateglinide Form M.
45. A crystalline form of nateglinide, wherein the crystalline form is a solvate of dichloroethane.
46. The crystalline form of claim 45, wherein the crystalline form is nateglinide Form N.
47. A crystalline form of nateglinide, wherein the crystalline form is a solvate of chloroform.
48. The crystalline form of claim 47, wherein the crystalline form is nateglinide Form Y.

49. The crystalline form of claim 47, wherein the crystalline form is nateglinide Form Q.
50. A crystalline form of nateglinide, wherein the crystalline form is a solvate of dichloromethane.
51. The crystalline form of claim 50, wherein the crystalline form is nateglinide Form Y.
52. A crystalline form of nateglinide, wherein the crystalline form is a solvate of heptane.
53. The crystalline form of claim 52, wherein the crystalline form is nateglinide Form θ.
54. A crystalline form (omega) of nateglinide characterized by an XRPD pattern with peaks at 4.5, 7.8, 15.5, 16.9, 17.8, 19.2, 19.7 ±0.2 degrees 2θ.
55. The crystalline form of claim 54, wherein the crystalline form is characterized by an XRPD pattern as substantially depicted in Figure 63.
56. A process of preparing the crystalline nateglinide of claim 54, comprising the steps of:
 - a) preparing a solution of nateglinide in a mixture of water and isopropanol;
 - b) crystallizing the crystalline form from the solution; and
 - c) recovering the crystalline nateglinide.
57. The process of claim 56, wherein the water to isopropanol ratio is from about 1/2 to about 1/5 (vol/vol).
58. A process for preparing nateglinide Form Z comprising the step of heating the crystalline form of claim 54.
59. A crystalline form of nateglinide, wherein the crystalline form is a solvated form of isopropanol and water.
60. The crystalline form of claim 59, wherein the crystalline form contains about 50% water and isopropanol (LOD).
61. A pharmaceutical formulation for administration to a mammal comprising a crystalline form of nateglinide selected from the group consisting of Form A, M, N, Q, Y, theta and omega, and a pharmaceutically acceptable excipient.
62. A method of lowering the blood level sugar of a mammal comprising administering the pharmaceutical formulation of claim 61 to the mammal.